

# ICT Literacy Map

THIS MAP WAS CREATED IN COOPERATION WITH THE NATIONAL SCIENCE TEACHERS ASSOCIATION

*ICT Literacy Maps are the result of hundreds of hours of research, development and feedback from educators and business leaders across the nation. The Partnership has issued ICT Literacy Maps for the core subjects of Geography, Math, English and Science. These tools are available at [www.21stcenturyskills.org/matrices/](http://www.21stcenturyskills.org/matrices/).*

**The Partnership for 21st Century Skills advocates for the integration of Information and Communication Technology (ICT) Literacy into K-12 education so that students can learn and achieve in the core academic subjects at much higher levels. The Partnership defines ICT Literacy as the use of 21st century tools to perform learning skills.**

The Partnership has forged alliances with key national organizations that represent the core academic subjects, including English, Math, Science and Geography. As a result of these collaborations, the Partnership has developed a series of ICT Literacy Maps that illustrate the intersection between ICT Literacy and core academic subjects. The maps enable educators, administrators and policymakers to gain concrete examples of how ICT Literacy can be integrated into core subjects.

**Learning Skill**  
+  
**21st Century Tool**  
=  
**ICT Literacy**

**Communication Skills**  
Understanding, managing, and creating effective communications: (a) orally, (b) written, (c) using multimedia.

**21st Century Tools for: Communication, Information Processing, and Research**

**SAMPLE Student Outcomes for: Accessing, Processing, Managing, Integrating and Communicating Information**

4th Grade	8th Grade	12th Grade
<p>Video and audio recording devices, microphones, audio enhancement devices, computers, PDAs, word processing, spreadsheets, presentation software, email.</p> <p>• Use a variety of tools and formats (oral presentations, journals, and multimedia presentations) to summarize and communicate the results of observations.</p> <p><b>E.G.</b></p> <p>a. Explain, using a model constructed of modeling clay and a tree branch, how a caterpillar eats.</p> <p>b. Prepare a poster illustrating the components of a local habitat; trace a food chain in an illustrated chart.</p> <p>c. Use simple media instruments to create a clearly labeled chart of organisms observed and identified during a study of the school yard.</p>	<p>Video and audio recording devices, microphones, audio enhancement devices, computers, PDAs, word processing, spreadsheets, presentation software, email.</p> <p>• Use a wide range of tools and a variety of oral, written, and graphic formats (e.g., diagrams, flow charts, simulations, graphs) to share information and results of observations and investigations.</p> <p><b>E.G.</b></p> <p>a. Explain the effects on plants and animals of the loss of their natural habitat.</p> <p>b. Develop a chronological model or time scale of major events in the formation of the earth.</p> <p>c. Design a multimedia presentation explaining the interrelationships of biotic and abiotic elements in a specific ecosystem.</p>	<p>Video and audio recording devices, microphones, audio enhancement devices, assistive devices, digital recorders, computers, PDAs, word processing, spreadsheets, presentation software, email.</p> <p>a. Select and use appropriate scientific vocabulary to orally share and communicate scientific ideas, plans, results, and conclusions resulting from observations and investigations.</p> <p><b>E.G.</b> Use historical and current weather data to support a position on future weather patterns.</p> <p>b. Create written reports and journals to share and communicate scientific ideas, plans, results, and conclusions resulting from observations and investigations.</p> <p><b>E.G.</b> Graph sunrise and sunset data from observations and investigations and relate them to the motions of the Earth.</p> <p>c. Create a multimedia presentation incorporating numeric, symbolic and/or graphic modes of representation to share scientific ideas, plans, results, and conclusions.</p> <p><b>E.G.</b> Present data on different chemical substances in a table using appropriate headings such as compound, element, chemical and physical property.</p>

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An example from the Math ICT Literacy Map illustrates sample outcomes for teaching communication skills.